

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 55

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ARNOLD Z. GORDON

Appeal No. 2001-2557
Application No. 08/888,996

ON BRIEF

Before KIMLIN, GARRIS, and TIMM, Administrative Patent Judges.
KIMLIN, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1-5
and 7-11.

Claim 10 is illustrative:

10. A non-brittle solid electrolyte composite
comprising: an ionically conductive ceramic matrix of
one of the following groups of solid oxide
electrolytes: zirconia oxide, bismuth oxide, ceria

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based alloys or nickel based alloys or superalloys, said ductile metallic phase extending throughout the body of said ceramic matrix, said ductile metallic phase of said composite comprising a continuous, interconnected, ordered, repeating ductile metallic array forming a repeating pattern structure, said ductile metallic array having thickness of 0.003 inches or less and which is embedded within, surrounded by, supporting and in intimate contact with said ceramic body substantially throughout the composite body so as to provide a high degree of interface between the ceramic and metallic array resulting in a ceramic composite which is non-brittle in practical use and which has a thickness of 0.01 inches or less.

The examiner relies upon the following references as evidence of obviousness:

Bothwell	4,276,331	Jun. 30, 1981
Isenberg	4,582,766	Apr. 15, 1986
Weiman	5,211,776	May 18, 1993

Appellant's claimed invention is directed to a solid electrolyte composite comprising an ionically conductive ceramic matrix and a ductile metallic phase extending throughout the matrix. According to appellant,

[t]he importance of the resulting composite electrolyte is that it is ductile in the sense that it is sufficiently strong to withstand stresses to which it

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Appealed claims 1-5 and 7-11 stand rejected under 35 U.S.C. § 112, first paragraph, description requirement. Claims 1-5 and 7-11 also stand rejected under 35 U.S.C. § 112, second paragraph. In addition, claims 1-5 and 7-11 stand rejected under 35 U.S.C. § 103 as being unpatentable over Bothwell and Isenberg. All the appealed claims also stand rejected under 35 U.S.C. § 103 as being unpatentable over Weiman in view of Bothwell and Isenberg.

We consider first the examiner's rejection of the appealed claims under 35 U.S.C. § 112, first paragraph. It is the examiner's position that it is not clear "where the various ductile metal group members in claim 10 are supported in the original specification" (page 4 of answer, second paragraph), namely, stainless steels, iron based alloys, cobalt based alloys, or nickel based alloys or superalloys. Although appellant maintains that the present specification discloses and exemplifies various stainless steels which are, in fact, iron based alloys, cobalt based alloys, nickel based alloys and superalloys, it is the examiner's position that "specific classes

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grid and specific trade named examples and that . . . [i]t is not clear that intermediate sub groups are apparent from a [sic, an] overall disclosed genus and specific species" (page 7 of answer, first paragraph).

In essence, we understand the examiner's position to be that the disclosure of certain species does not provide descriptive support for the variety of genus specified in claim 10. However, we note that appellant's original specification and original claims describe an even broader genus of metals that are incorporated in the ceramic matrix. In particular, the original specification discloses

[t]he ductile tough solid electrolyte ceramic composite employed in the practice of the present invention comprises a regular, ordered, continuous, repeating array of ductile intersupported or interconnected, metallic fibers in intimate contact with the ceramic matrix so as to be substantially surrounded or embedded within it and supporting the matrix (sentence bridging pages 3 and 4, emphasis added).

Likewise, original claim 1 recites a "repeating ductile metallic array." Accordingly, we find that appellant's original specification would have related to one of ordinary skill in the

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present application, the broad invention of a ductile metallic surrounded by an ionically conductive ceramic matrix. Hence, it is our view that the alloys recited in claim 10 on appeal are sub-genuses encompassed by the broader genus originally described in appellant's specification. Also, as argued by appellant, the original specification describes specific alloys that qualify as the claimed "stainless steel, iron based alloys, cobalt based alloys, or nickel based alloys or super alloys." Accordingly, we will not sustain the examiner's rejection of claim 10 under § 112, first paragraph.

The examiner also does not find original descriptive support in the specification for "the temperature limits of claims 1 and 7" (page 4 of answer, second paragraph). Claim 1 recites "less than 1700°C", but claim 7 has no recitation of a temperature. Claim 9 recites "less than 1550°C." Accordingly, we will presume that the examiner's rejection of claim 7 is directed to claim 9. Also, we note that appellant has considered the examiner's rejection to be directed to claims 1 and 9 (see page 6 of brief,

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Appellants maintain that "the generally recognized melting points of stainless steel superalloys such as Inconel and Haynes brand superalloys is less than 1700°C and also more specifically in the range of somewhat less than 1550°C" (page 6 of brief, last paragraph). Appellant also submits that "[i]t is also believed that the upper limitation on the melting point of the ductile metallic array is by implication set forth as a result of the firing temperatures stated in the specification for example at Page 8" (id).

Although the melting point of the Inconel and Haynes brand superalloys may be less than 1700°C and 1550°C, appellant is claiming a broad range of temperatures that are not described in the original specification. In re Wertheim, 541 F.2d 257, 263, 191 USPQ 90, 97 (CCPA 1976). Accordingly, we will sustain the examiner's rejection of claims 1-5, 9 and 11 under § 112, first paragraph. We will not sustain his rejection of claims 7 and 8 since these claims do not recite a temperature limitation.

We will also not sustain the examiner's rejection of claims

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However, we do not find that the examiner, prima facie, has established that one of ordinary skill in the art would not understand the practical uses of the claimed solid electrolyte composite when taking into consideration appellant's supporting specification and state of the prior art. It is well settled that claim language must not be read in a vacuum. In re Sneed, 710 F.2d 1544, 1548, 218 USPQ 385, 388 (Fed. Cir. 1983).

We will not sustain the examiner's rejections of the appealed claims under 35 U.S.C. § 103 over Bothwell in view of Isenberg, or Weiman in view of Bothwell and Isenberg for essentially those reasons presented by appellant in the brief. According to the examiner, "[i]t would have been obvious to one of ordinary skill in the art to select and use the stabilized zirconia deposit embodiment of Bothwell as an electrolyte because of the teachings of Isenberg et al. that stabilized zirconia functions as an electrolyte" (page 5 of answer, first paragraph), and that "[i]t would have been obvious to one of ordinary skill in the art to use the zirconia and grid of Bothwell in the

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refuted the persuasive rational of appellant that the composite of Bothwell is not a solid electrolyte composite comprising an ionically conductive ceramic matrix. As emphasized by appellant, the composite of Bothwell is utilized as a thermal insulator for the exhaust system of an internal combustion engine, and is preferably porous. As such, we agree with appellant that Bothwell is non-analogous to the art of cermet electrodes disclosed by Isenberg and is not reasonably pertinent to the problem confronted by appellant in the field of solid electrolyte composites. In our view, the examiner has resorted to impermissible hindsight in combining the cited prior art.

All of the appealed claims also stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent 5,069,987 and claim 1 of U.S. Patent 5,332,483. Appellant has not offered a substantive argument against this rejection but have offered to file a terminal disclaimer (see page 11 of brief, penultimate paragraph). Accordingly, we will, perforce affirm the examiner's

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In conclusion, based on the foregoing, the examiner's decision rejecting the appealed claims is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

EDWARD C. KIMLIN)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
BRADLEY R. GARRIS)	APPEALS AND
Administrative Patent Judge)	INTERFERENCES
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CATHERINE TIMM)	
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